

Duramix LC

Liquid Crystalline Capillary Integral waterproofing admixture for concrete

Primary applications

DURAMIX LC is recommended for construction of sewage water treatment plants, secondary containment structures, tunnels, subway systems, underground vaults, foundations, parking structures, swimming pools, reservoirs, pre-cast, shotcreting applications.

Features & benefits

- * Resists positive & negative hydrostatic pressure
- * Becomes an integral part of the concrete
- * Highly resistant to aggressive chemicals
- * Can seal hair line cracks up to 0.2mm and it is permanent
- * Allows concrete to breathe
- * Non-toxic, VOC free
- * Added to concrete at the time of batching and therefore is not subject to climatic re-strains.
- * Self healing property

Description

DURAMIX LC is a state-of-the-art Integral capillary crystalline waterproofing admixture available in liquid form. A physio chemistry within the DURAMIX LC reacts moisture and free lime in the concrete, creating millions of water-insoluble nano crystalline fibers, which fill the pores, capillary tracts, minor shrinkage cracks within the concrete. Passage of water in the concrete, either from the positive or negative water pressure side is permanently blocked and the re-inforcement protected corrosion. The DURAMIX LC chemicals remain an integral part of the concrete for the life of the structure, always re-activating whenever exposed to moisture. DURAMIX LC can seal static cracks up to 0.4mm. It may require several weeks to reach its maximum waterproofing capability. Environmental factors like temperature, density, moisture can affect the time of sealing process.

Standard Compliance:

DIN 1048-Part 5 - Water permeability
ASTM C 1202-97 - Rapid chloride permeability
ASTM C 827 - Unrestrained expansion test
ASTM C 109 - Compressive strength

Typical dosage

1.0% to 2.0% by weight of total cementitious. Consult CCPL technical team for assistance in appropriate dosage rates.

Properties

Appearance	: Clear to cloudy coloured liquid
Specific Gravity	: 1.08 to 1.12 Kg/Ltr
Chloride content	: Nil
Composition	: Mixture of active crystals

	Control	DURAMIX LC
Water permeability	15.0	7.8
Compressive strength		
7 Days	22.5 Mpa	24.9 Mpa
28 Days	33.2 Mpa	36.4 Mpa
Setting time Initial	06.50 hours	07.10 hours
Setting time Final	07.15 hours	07.45 hours

Application instructions

A. Ready Mix Plant - Wet Mix Operation

Pour the required amount of mixed DURAMIX LC in to the drum of the ready-mix truck.

Produce the concrete as per the mix design in the batching plant, and take in to account the amount of water already placed in the ready-mix truck.

Drop the concrete mix in to the ready-mix truck.

Mix at least 5minutes to assure homogeneous distribution of the DURAMIX LC in the concrete.

B. Ready Mix Truck - Job Site Mixing

To take the properly weighed or measured the quantity of Liquid crystalline admixture and keep ready at the job mixing plant. and take into account the amount of water already placed in the ready mix truck. Pour the required amount of mixed DURAMIX into the drum of the ready-mix truck, contain the wet concrete mixed material. Mix at least 5 minutes to ensure proper homogeneous distribution of DURAMIX LC in the concrete.

C. Ready Mix Plant - Dry Mix operation

Add DURAMIX LC powder in to the drum of ready-mix truck. Drive the truck under the batch plant and add 65% to 70% of the required water along with 165 to 215kg of aggregates. Mix the materials for 2 to 3 minutes to ensure the liquid Crystalline is distributed evenly throughout the mix water. Add the balance of materials to the ready-mix truck in accordance with standard batching practices.

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D. Precast batching plant

Add DURAMIX LC to the aggregates and sand, then mix thoroughly for 2-3 minutes before add the cement and water. The total concrete mass should be mixed as per standard method.

NOTE

To obtain a homogeneous mixture of DURAMIX LC with the concrete. Therefore don't add DURAMIX LC Liquid admixture directly to wet concrete as this may cause clumping and full thorough dispersion will not occur.

Setting Time & Strength

DURAMIX LC will provide a normal set concrete. Concrete containing DURAMIX LC will develop higher ultimate strengths than plain concrete. Trial mixes should be carried out under project conditions to determine setting time and strength of the concrete. The concrete treated with DURAMIX LC should be placed and finished in accordance with good concrete practices.

Joints & Pipe Penetrations

Cold joints and pipe penetrations should be designed using Dura water-stop. DURAMIX LC does not prevent defects in the concrete. Consult Condura team on the particular applications. Penetrations must be securely sealed to maintain water tightness. DURAMIX LC is designed to waterproof for rigid concrete structures only and will not reliably seal cracks and joints which are subjected to variable loading or repeated movement. Contact Condura Technical Team for the project specific recommendations.

Packing

DURAMIX LC is supplied in 20kg, 50kg & 250kg HDPE drums.

Shelf Life

DURAMIX LC has shelf life of 12 months if kept in a dry store in unopened condition.

Health and Safety

DURAMIX LC liquid crystalline integral waterproofing contains chemicals that may cause irritation to the eyes and skin. Goggles, rubber gloves and long sleeves should be worn when working with these products.



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